NOTES.

The annual meeting of the Institution of Naval Architects commenced at Cardiff on Tuesday, when an important paper upon "Fast Ocean Steamships" was read by Dr. Elgar. Owing to the rough weather, Lord Brassey, the president, was unable to be present, his yacht being prevented from reaching the fort.

The forty-second meeting of the American Association for the Advancement of Science will be held during August at Madison, Wisconsin. The local secretary is Prof. C. R. Barnes, of the State University.

The second annual meeting of the International Union of Photography will be held in Geneva from August 21 to 26. The headquarters of the Union are at 33, Rue Rembrandt, Antwerp.

Arrangements have been made for a visit of the Geologists' Association to Ireland from July 24 to 29. The directors of the excursion are Profs. W. J. Sollas, F.R.S., and Grenville A. J. Cole, and a very attractive programme has been provided. In addition to the serious work, more than one social gathering is promised, so the trip will doubtless be enjoyed by all who undertake it. A geological map of the district to be visited, prepared by Prof. Cole, is printed in the special circular issued for the excursion by the Association, and Prof. Sollas's paper on the geology of Dublin and its neighbourhood, read before the Association on the 7th inst., is now in the press, and will be published the day before the party leaves London. As it is important to obtain an early estimate of the probable number of the party, all members who propose joining the excursion should apply at once to the Secretary, Mr. Thos. Leighton, Lindisfarne, St. Julian's Farm Road, West Norwood, S.E.

A copy of the report of the Zoological Society that has just been printed has been received. Its contents will be summarised next week.

The fifth Congress of Archæological Societies in union with the Society of Antiquaries was held on Tuesday at Burlington House, Sir John Evans, K.C.B., F.R.S., being in the chair. About forty delegates were present, including Lord Hawkesbury, Mr. Stanley Leighton, M.P., Profs. Flinders Petrie, and E. C. Clark, &c. It was announced that progress had been made with the archæological maps of Essex, Derbyshire, Sussex, and Surrey. Several papers were read, one on "A Photographic Record of Archæological Objects" exciting an interesting discussion.

The Laboratory of the Marine Biological Association at Plymouth has still a few tables unoccupied for the summer vacation. Applications for permission to work there should be sent in without delay to the Director.

Writing from Murree, on June 7, Mr. F. C. Constable says that, during a recent hailstorm, corrugated iron roofs were in many cases perforated by the hail. He measured one hailstone four hours after the storm, and found it to be 4¼ inches round.

A violent thunderstorm occurred on Ben Nevis last week from 11 p.m. of Friday to 2 a.m. of Saturday, St. Elmo's fire appearing there at the same time. During another thunderstorm on Saturday afternoon flashes came off from the telegraph wire connections inside the observatory; and about the same time a fire-ball was seen to strike the ground near the foot of the hill. The hygrometric fluctuations at the time were remarkable.

During the past week sharp thunderstorms have occurred in many parts of the British Islands, accompanied by hail and very heavy rain. Between the 7th and 9th the fall within twenty-four hours exceeded an inch at several places in the north of England and in parts of Scotland, and in the north of Ireland on Sunday it amounted to 2·81 inches, a fall more than double the total for the month of June this year. The temperature was also exceptionally high in the southern parts of England during the first part of the period, the maximum reading being 89°·9 at Greenwich on Friday and Saturday, a temperature which was not equalled in any part of the summer during the five years 1888–92, and at Cambridge the shade reading on Saturday registered 92°.

Since February, 1892, a Richard thermograph has been installed on the summit of the Obir, at a height of 2140m., or about 1000m. below the level of the Sonnblick Observatory. The records of temperature up to February, 1893, as shown by this thermograph, were communicated and discussed by Director J. Hann at a recent meeting of the Vienna Academy (June 12). They afford a valuable contribution to the knowledge of the daily changes of temperature in the higher regions of the atmosphere. A comparison with the corresponding temperatures registered on the Sonnblick shows an almost identical course of changes, except that in summer the range on the Obir was perceptibly larger. During eight months, from October to May, hardly any daily variation is recorded in the decrease of temperature with height between the Obir and Sonnblick. In the summer months, the most rapid decrease was found to occur at 1 p.m., being 0°·74 per 100m., the least rapid at 11 p.m., being 0°·61 per 100m. The mean decrease per 100m. for the summer months was 0°·67, for winter 0°·54, and for spring and autumn 0°·56.

A new determination of the mass and the density of the earth has been made by M. Alphonse Berget, who describes his method in the current number of the *Comptes Rendus*. It consisted in altering the level of a lake by 1 m., and noticing the effect produced upon a hydrogen gravimeter such as was used by Boussingault and Mascart to determine the diurnal variation of gravity. The lake was that of Habaz-la-Neuve, in Luxemburg, of 79 acres area, belonging to M. François de Curel. The level could be raised or lowered in a few hours. The variation of the column of mercury was minutely observed by means of Fizeau's interference fringes, produced *in vacuo* between the surface of the mercury and a piece of plane-polished glass at the bottom of the observing tube. Two series of readings were taken, the one on lowering the level of the lake by 50 cm. and 1 m., the other on raising it by the two corresponding amounts. The displacement of the column for a change of level of 1 m. was $1·26 \times 10^{-6}$ cm. The value for K, [the constant of gravitation, *i.e.* the attraction in dynes produced by a mass of 1 gr. upon another placed 1 cm. from it in air, was found to be $6·80 \times 10^{-8}$. The mass of the earth was found to be $5·85 \times 10^{27}$ grammes, and its density 5·41, which is in fair agreement with results hitherto obtained.

During the cruise of the *Manche* in the neighbourhood of Jan Mayen and Spitzbergen, M. G. Pouchet made some interesting observations of the various kinds of ice to be found on those barren Arctic islands. In the northern lagoon of Jan Mayen, which was partly covered with ice on July 27, the ice, according to a description in the *Comptes Rendus*, was formed of irregular vertical prisms about 10 mm. thick separated by spaces of about 1 mm. and joined at the upper surface by a uniform layer of semi-transparent ice 1 to 2 mm. thick. At

Research Bay, Spitzbergen, the gigantic front of the two glaciers which flow into the sea presented three different tints. At the base some parts were quite dark, suggesting deep caves, but really consisting of pure homogeneous, compact ice. The middle region was greenish-blue, and the upper, consisting of snow-ice, was white. The ice-floes were either white or greenish-blue, or of an extremely intense emerald green. On taking one of the latter out of the water it was found to consist of homogeneous limpid ice, absolutely colourless to the thickness of 1 m. or so. The deep green colour was due to its illumination by the green water of the bay, which, like that of the Isfjord, is of an intensely green colour.

An important paper by Messrs. Sarasin and De la Rive is published in the *Archives des Sciences Physique et Naturelles* and contains an account of a series of experiments on the interference of electrical waves after reflection from a metallic screen. The authors being of opinion that the results obtained by Hertz and themselves in a former investigation were vitiated on account of the reflecting surface being too small, undertook this series of experiments, using as a reflecting surface a sheet of zinc 16 metres long and 8 metres high. The arrangement employed was almost the same as that used by Hertz, the spark-gap of the oscillator, however, being surrounded by oil. The resonators were circular, and had been used in a previous series of experiments on the propagation of electrical waves along conducting wires, in which it had been found that each resonator responds to waves of a definite wave-length, and to these only. A series of observations, made with a view of ascertaining the minimum size of mirror, which gives consistent results with resonators of different sizes, showed that for a resonator of 75 cm. in diameter the reflecting surface must have a length of from 12 m. to 14 m. and a height of 8 m., while for a resonator of 35 cm. in diameter a mirror 5 m. long and 3 m. high is sufficient. The results obtained may be summed up as follows:—(1) A circular resonator has a constant wave-length to which it responds, whatever be the dimensions of the oscillator, the strength of the induced spark only varies, attaining a maximum value for a certain length of the oscillator, which gives waves in unison with the resonator. (2) The quarter wave length of a circular resonator is approximately equal to twice its diameter. (3) In the case of normal reflection from a metallic mirror the first node coincides exactly with the surface of the mirror. (4) The velocity of propagation of the electrical waves is the same in air as along conducting wires.

We have received a copy of a calibration curve of one of Prof. Perry's new electric current meters, which are now being constructed for practical work by Messrs. Johnson and Phillips. This meter, as some of our readers may know, consists of a copper bell (with open neck) which rotates about its axis in a radial magnetic field formed between an inner cylinder and an outer surrounding cylinder, both of iron, and magnetised by a coil surrounding the inner. As the surfaces of these cylinders are furnished with teeth projecting towards one another, leaving just sufficient clearance space for the bell, there are, alternating with one another round the bell, places of maximum and minimum field intensity. The bell is immersed in mercury, and being covered with varnish, except at the lip and at the neck, where it receives and gives out current, is the seat of a current sheet running from the lip to the neck. Thus the bell rotates about its axis with a speed depending on the current flowing and the intensity of the magnetic field. By the ingenious device of rendering the field non-uniform, the resisting couple due to solid and fluid friction is made small in comparison with that due to Foucault currents; and as the latter is proportional to the square of the maximum field intensity multiplied by the speed of rotation, and the driving couple to the product of the field intensity and the current, a working formula is obtained in which the current is proportional to speed and to field intensity. By making the field sufficiently intense, the speed can be made as slow as may be desired, and error from neglect of friction proportionately diminished. The meter is thus very simple, and unlikely to get out of order, or to be inconstant or untrustworthy in action. It is claimed, further, that the temperature errors balance one another, and this is borne out by the fact that the calibration curve is a straight line from the first current marked, 2·5 ampères, to the highest, 60 ampères. The instrument must therefore, within the range of currents for which it is designed, work with great accuracy.

The *Philosophical Magazine* for July contains a note by Messrs. Harvey and Hird on some differences they have observed in the behaviour of positive and negative electricity in high frequency discharges. They find that, when a brush discharge takes place in air between a point and a plate, the plate is always positively charged, although the discharge is oscillatory. In the case of hydrogen, however, the plate becomes negatively electrified. Thus in the case of a brush discharge in air or oxygen the positive electricity passes more readily than negative from a point into any neighbouring conductor, while in hydrogen the reverse takes place, negative electricity passing more readily.

Weber showed some years ago that the eggs of the common pike could be caused to produce double monstrosities if the recently fertilised ova were violently shaken. Mr. John A. Ryder has recently communicated a paper to the Academy of Natural Sciences of Philadelphia, which leads to the belief that the Japanese produced their singular breeds of double-tailed goldfishes by taking the eggs of the normal species of goldfishes and shaking them, or disturbing them in some way, as Prof. Weber did with the eggs of the pike. They would thus obtain some complete double monsters, some with two heads and a single tail, and some with double tails. Those most likely to survive would be those with only a duplication of the tail. These being selected and bred would probably hand down the tendency to reproduce the double tail, a tendency which could become fixed and characteristic if judicious selection were maintained. Mr. Ryder thinks that his investigation warrants the conclusion that the regenerative power of organisms disappears as we rise in the scale of organisation, last of all in the peripheral extremital parts. He further observes that the power to produce monstrosities or cogenital aberrations of development due to external disturbances of segmentation, during growth, diminishes in the higher forms *pari passu* with the advance in development.

In a number of papers communicated to the American Philosophical Society, the American Academy of Arts and Sciences, and the Boston Society of Natural History, Mr. A. S. Packard gives the results of studies on the life-history of some Bombycine moths. He has worked out the transformations of several of the lower Bombyces, and has arrived at some valuable results. He has treated the larvæ as though they were adult, independent animals, and has worked out their specific and generic as well as family characters. The origin of mimetic and protective characters has been traced, and the time of larval life when they are assumed ascertained. This involves a study of the development of the more specialised setae, spines, tubercles, lines, spots, and other markings. Facts have also been obtained with regard to the ontogeny of American species and genera, which, when compared with the life-histories of European, Asiatic, and South American Bombyces, may lead to a partial comprehension of the phylogeny of the higher Lepidoptera.

THE *Essex Naturalist*, No. 4, contains an address on periodicity in organic life, delivered by Mr. Henry Laver as retiring President of the Essex Field Club. Reasons are given for the belief that plant and animal life periodically fluctuate in richness and scarcity.

AT Trenton, and the Delaware Valley, and Ohio, flints have been found in ice-age drift and described as implements of palæolithic man. In three papers received from Mr. W. H. Holmes this interpretation is disputed, and the "finds" are said to be of Indian manufacture—a view which, if accepted, tells against the existence of glacial man in America.

PROFS. L. CICCONE and F. CAMPANILE have prepared a set of tables showing the intensity of gravity, in C.G.S. units, for every ten minutes of latitude (*Rivista Scientifico-Industriale*). They also give the value of g at all the principal observing stations in the world.

OWING to the delay in the publication, by the U.S. National Museum, of a "Monograph of the North American Bats," by Dr. Harrison Allen, the introduction to the Bulletin has been issued in advance. Judging from it, the coming memoir will be of an important character.

MESSRS. FRIEDLANDER AND SON, Berlin, have issued their *Natural History News*, No. 10.

THE "Transactions of the Leicester Literary and Philosophical Society," vol. ii., part 12, contains a paper on stings and poison fangs, by Mr. G. T. Mott, and a number of notes on some East Anglian birds, by Mr. L. Creaghe-Haward.

A VOLUME has just been published containing the results of rain, river, and evaporation observations made in New South Wales during 1891, under the direction of Mr. H. C. Russell, C.M.G., F.R.S , the Government Astronomer of the colony.

IN *Das Wetter* for May G. Falkenhorst gives an account of the various plants which are affected by weather, including the paternoster pea (*Abrus precatorius*), or "weather plant," the claims of which as a prognosticator of coming weather were shown to be groundless in the *Kew Bulletin* of January 1890. He points out that the indications of these hygroscopic plants, however worthy of study from a botanical point of view, only refer to simultaneous changes of weather.

THE Royal University of Ireland has issued its calendar for the year 1892. The papers set at the examination held during the year are published in a separate volume as a supplement to the calendar.

THE "Matriculation Directory" has been published by the University Correspondence College Press. It contains solutions to the questions set at the matriculation examination of London University last month, and articles on the special subjects for January and June next year.

"DIE MEDICINISCHE ELECTROTECKNIK," by Dr. J. L. Hoorweg, is a little book, dealing chiefly with elementary facts and principles more or less connected with medical electricity. Magnetism, statical electricity, voltaic electricity, and electrical measurements are the subjects of four separate chapters, and the remaining three chapters are devoted to a study of the action of electricity upon the human body, electro-medical apparatus, and various methods of electrification. The text is illustrated by seventy-seven figures and diagrams.

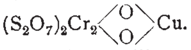
THE second number of Alembic Club Reprints can now be obtained from Messrs. Simpkin, Marshall and Co. It is entitled "Foundations of the Atomic Theory," and contains reprints of papers by Dalton and Wollaston, and an extract from Dr. Thomas Thomson's "System of Chemistry," in which book the earliest printed account of Dalton's views was given.

A NEW acid containing chromium and sulphuric acid, possessing somewhat remarkable properties, is described by M. Recoura in the current number of the *Comptes Rendus*. It is related to pyrosulphuric acid, $H_2S_2O_7$, in a manner somewhat similar to that in which the chromosulphuric acid, $(SO_4)_2Cr_2(SO_4H)_2$, previously prepared by M. Recoura, is related to ordinary sulphuric acid. Its constitution is represented by the formula $(S_2O_7H)_4Cr_2(OH)_2$. Its most remarkable property is that the two atoms of hydroxylic hydrogen are readily replaceable by metals to form salts, the whole of which, even those yielded by the introduction of the metals of the alkalies and of ammonium, are completely insoluble in water, although the acid itself is readily soluble. It has been termed chromopyrosulphuric acid. In order to prepare it a solution containing one molecular equivalent of chromic sulphate, $Cr_2(SO_4)_3$, and five molecular equivalents of sulphuric acid is evaporated over a water-bath, when a syrupy liquid of a deep green colour is eventually obtained. This liquid is then further heated to a temperature of 110–115° for a couple of days, which treatment induces a complete change of character and transparent tabular crystals of the new acid, possessing a vitreous lustre and a bottle-green colour, are deposited. Its formation is represented by the following equation :—

$$Cr_2(SO_4)_3 + 5H_2SO_4 = (S_2O_7H)_4Cr_2(OH)_2 + 2H_2O.$$

THE properties of chromopyrosulphuric acid differ widely from those of chromosulphuric acid. It is readily soluble in water, forming an opaline yellowish-green solution. This solution yields precipitates with the solutions of all commonly occurring salts, those of the alkalies not excepted. It may be generally stated that upon the addition of the solution of any metallic salt whatever to a solution of chromopyrosulphuric acid, a flocculent precipitate, more or less green in colour, is obtained. The precipitate, however, is not chromopyrosulphuric acid in which merely the hydroxylic hydrogen is replaced by the metal of the salt employed. One half of the pyrosulphuric acid is detached, and in contact with the water present produces four molecules of free ordinary sulphuric acid. The salt precipitated is thus derived from the acid $(S_2O_7)_2Cr_2(OH)_2$. For instance, when a solution of potassium chloride is added to a solution of chromopyrosulphuric acid the following change occurs :—

$$(S_2O_7H)_4Cr_2(OH)_2 + 2KCl + 2H_2O = (S_2O_7)_2Cr_2(OK)_2 + 2HCl + 4H_2SO_4.$$

Similarly copper sulphate solution produces a pale green precipitate of the salt  $(S_2O_7)_2Cr_2\langle{}^{O}_{O}\rangle Cu$.

Solutions of caustic alkalies act like salts. Thus, when a solution of caustic soda of known strength is slowly added a precipitate of the sodium salt $(S_2O_7)_2Cr_2(ONa)_2$ is thrown down, and the solution attains its neutral point when ten molecular equivalents of soda have been added, the amount required to form the above salt and to neutralise the four molecules of sulphuric acid liberated. M. Recoura has also isolated the acid itself from which these salts are derived, and promises a description of its properties in a subsequent memoir.

NOTES from the Marine Biological Station, Plymouth.—Last week's captures include the Nemertines *Prosorhochmus Claparedii* and *Carinella linearis*, numbers of the Polychæte *Myzostomum* on *Antedon rosacea*, various species of the Pantopod genera *Phoxichilus*, *Nymphon* and *Ammothea*, the Isopod *Apseudes talpa*, the Schizopod *Heteromysis formosa*, the Brachyuran *Achæus Cranchii*, and the Nudibranchiate Mollusca *Æolidiella glauca* and *Galvina cingulata*. The chains of the

Salp *Thalia democratica-mucronata* have now for the most part broken up, and the detached sexual forms, each with a contained embryo, have been taken in considerable numbers. The floating fauna has also included Cirripede and Copepod Nauplii, Polychæte trochospheres and Molluscan veligers. Among Leptomedusæ *Clytia Johnstoni* and small *Obeliæ* have been abundant; and among Anthomedusæ *Sarsia eximia* has been observed, together with numbers of an apparently undescribed species of *Dysmorphosa*, resembling *Rathkea octopunctata* in its power of budding from the manubrium. The Mollusc *Galvina cingulata* and the Tunicate *Thalia democratica-mucronata* are now breeding.

THE additions to the Zoological Society's Gardens during the past week include an American Black Bear (*Ursus americanus*) from Canada, presented by Mr. Joseph Politzer; a Hawk's-billed Turtle (*Chelone imbricata*) from the West Indies, presented by Mr. C. Melhado; two Common Buzzards (*Buteo vulgaris*) European, deposited; two Australian Crows (*Corvus australis*) from Australia, purchased; a Thar (*Capra jemlaica*, ♀), a Triangular-spotted Pigeon (*Columba guinea*), a Cardinal Grosbeak (*Cardinalis virginianus*), two Hybrid Pied Wagtails (between *Motacilla lugubris*, ♂, and *M. melanope*, ♀) bred in the Gardens.

OUR ASTRONOMICAL COLUMN.

A NEW COMET.—A telegram received from Prof. Krueger announces that a comet with a bright tail was discovered by M. Quenisset at M. Flammarion's observatory, Juvisy, on July 9, its approximate place being R.A. 7h. 50m., N. Decl. 48° 10′. The comet is therefore in the constellation Lynx. In *Edinburgh Circular* No. 38, Mr. Heath says that a second telegram from the same source states that the comet was again seen on the 10th, at 12h. 59·3m. M.T. at Kiel, its place being then R.A. 8h. 29m. 45·7s., N. Decl. 46° 59′ 29″; daily motion, + 34m. 48s. and − 1° 24′.

COMET FINLAY (1886 VII.).—A continuation of M. Schulhof's ephemeris for the ensuing week is as follows:—

12h. M.T. Paris.

1893	R.A. app. ° ′ ″	Decl. app. ° ′ ″
July 13	3 59 23 84	+18 54 32·8
14	4 3 57·65	19 10 20·2
15	8 30·28	19 25 35·4
16	13 1·69	19 40 18·4
17	17 31·83	19 54 29·3
18	22 0·65	20 8 8·3
19	26 28·11	20 21 15·4
20	4 30 54·16	20 33 51·0

In the above ephemeris we have corrected the error made in the *Astronomische Nachrichten* (No. 3171), where the 16th is inadvertently printed 14th.

METEOR SHOWERS THIS MONTH.—In the list of the radiants of the principal meteor showers which Mr. Denning gives in the companion to the *Observatory* the following are visible this month, that occurring on the 28th being defined as "most brilliant":—

Date.	Radiant. α °	 δ °	Meteors.
July 19	314	+48	Short, swift.
20	269	+49	Swift.
22	16	+31	Swift, streaks.
25	48	+43	Swift, streaks.
28	**339**	**−12**	Slow, long.
30	6	+35	Swift, streaks.

L'ASTRONOMIE FOR JULY.—The current number of this journal commences with an article by M. Tisserand on the inauguration of the statue of Arago, which was referred to in these pages last week. M. Deslandres briefly refers to some of his results as shown by the photographs taken by him at the late total solar eclipse, to which are added the observations of several other observers, and several illustrations of the instruments employed. M. Denning contributes three drawings of comet Holmes (made on November 9, 16, and 19 last), showing its change of shape from the circular to the pear-shaped form. Other articles of interest refer to meteorological statistics, atmospheric phenomena, earth tremblings, &c. In the notes some recent measures are given of the diameter of Mars, and of the snow caps, the former made by M. W. W. Campbell at the Lick Observatory, and the latter by M. Asaph Hall at the Washington Observatory.

HIMMEL UND ERDE FOR JULY.—In this number Dr. W. Luzi concludes his interesting article on the diamond, having covered the ground between the first observations made at Florence in 1694, and M. Moissan's recent researches. Dr. Wilhelm Meyer continues his chapters on the physical condition of the planet Mars after the evidence of eminent observers, while Herr Gingel gives us his fourth chapter on the mechanics of the heavens, dealing with the new researches by G. H. Darwin on the influence of tides on the movements and form-proportions of the heavenly bodies, embracing particularly the earth-moon system. Among the notes that on variable stars calls for attention.

MUSEUMS ASSOCIATION.[1]

II.

THESE are the principles of what may be called the New Museum idea as applied to national museums of natural history. It is a remarkable coincidence that since they were first enunciated, and during the time of their discussion, but before they had met with anything like universal acceptance, the four first nations of Europe almost simultaneously erected in their respective capitals—London, Paris, Vienna, and Berlin—entirely new buildings on a costly, even palatial scale, to receive the natural history collections, which in each case had quite outgrown their previous insufficient accommodation. In the construction of neither of these four edifices can the guardians of the public purse be accused of want of liberality. Each building is a monument in itself of the appreciation of the government of the country of the value and interest of the natural history sciences. So far this is most satisfactory. Now that each is more or less completed, at all events for the present, and its contents in a fair way towards a permanent arrangement, it may not be without interest on the present occasion to give some comparative account of their salient features, especially with a view to ascertain whether and to what extent their construction and arrangement have complied with the requirements of the modern idea of such institutions.

It may seem ungrateful to those who have so liberally responded to the urgent representations of men of science by providing the means of erecting these splendid buildings, to suggest that if they had all been delayed for a few years the result might have been more satisfactory. The effects of having been erected in what may be called a transitional period of museum ideas is more or less evident in all, and all show traces of compromise, or rather adaptation to new ideas of structures avowedly designed for old ones. In none, perhaps, is this more strikingly shown than in our own, built, unfortunately, before any of the others, and so without the advantages of the experience that might have been gained from their successes or their shortcomings. Though a building of acknowledged architectural beauty, and with some excellent features, it cannot be taken structurally as a model museum, when the test of adaptation to the purpose to which it is devoted is rigidly applied. But to speak of its defects is an ungracious and uncongenial task for me. If it were not taking me too far away from my present subject I would rather speak of the admirable manner in which the staff are endeavouring to carry out the new idea under somewhat disadvantageous circumstances.

The new zoological museum in the Jardin des Plantes at Paris is a glorification of the old idea pure and simple. It consists of one huge hall, with galleries and some annexes, in which every specimen is intended to be exhibited, more or less imperfectly, on alternate periods to students and to the general public. The building and cases are very handsome in style, and there are endless rows of specimens of all kinds neatly mounted in a uniform manner. There are no storerooms, no laboratories, no workrooms connected with the building. These are all in

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[1] Continued from p. 236.